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# ANTHROPOLOGICAL ANALYSIS OF THE AVAR-PERIOD POPULATION OF SZEKSZÁRD—PALÁNKPUSZTA

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**Abstract**

In the vicinity of Szekszárd, at Palánkpuszta, between the years 1957 and 1960, there were excavated 233 graves from the Avar age. Out of them, the skeletal material of 136 graves could be rescued. The skeletal remains of 27 adult males and 37 females were suitable for being analysed in detail metrically, morphologically, and taxonomically. A result of the taxonomical analysis has been that the group of the brachycephals is together about 46 per cent of the total sample, that of the dolichocephals about 38 per cent. There could be demonstrated, anyway, in a less significant ratio, a Mongoloid racial component, as well. Taking into consideration the archaeological investigations of ÁGNES SALAMON, there were characteristic of the early period of the cemetery the dolicocephalic and Mongoloid components, while of the later period the brachycephals.

In the vicinity of Szekszárd, at Palánk-puszta, on a lofty sand-hill salvaging excavations were carried out between 1957 and 1960, directed in the first excavation period by archaeologist GY. KISS and in the later years by archaeologist ÁGNES SALAMON. P. LIPTÁK joined in the excavations, as well (with some interruptions). The plan of a part of the cemetery is, unfortunately, not available. The excavation is but partial; the tempo and direction of the excavation were determined by the points of view of rescue. In the area of the Avar-period cemetery there was found also a Hun-age cemetery from the 5th century, containing artificially deformed crania. In the course of the excavation there were found 233 numbered graves altogether. In some cases, in the absence of the archaeologist directing the excavation, the rescue was carried out by the Museum of Szekszárd; the graves have sometimes got a different numbering or got into the Museum as scattered items. Only the preliminary elaboration of the archaeological finds has taken place (SALAMON, 1968). The history of excavation can be followed in the corresponding volumes of the Archaeológiai Értesítő 1958, 1959, 1960, 1961). The skeletal material of graves 234 to 261 could no more be investigated here, in this paper.

ÁGNES SALAMON's comments on the archaeological finds will be published separately.

From the Avar-age cemetery of Szekszárd—Palánk there could be rescued the skeletal remains of 136 graves altogether (Table 1). The state of preservation of the material is beneath the average. The number of fragmentary crania is 38 and in 19 cases there were salvaged only postcranial skeletons. The number of adult and subadult skeletons in good state of preservation is 79. The number of adult crania suitable for detailed metrical analysis is unfortunately low, as compared to the high grave number of the excavation, namely 27 males and 37 females. The considerable female majority came about obviously casually as the excavation

*Table 1.* Szekszárd—Palánk, avar period: Skeletal material

| Characterization of the material | | Inf. I. | Inf. II. | Juv. | Ad. | Mat. | Sen. | Total |
|---|---|---|---|---|---|---|---|---|
| Fragmentary crania (unmeasured) | Males | — | — | — | 4 | 10 | 2 | 16 (42%) |
| | Females | — | — | — | 7 | 5 | — | 12 (32%) |
| | Undeterminable | 3 | 2 | 3 | 2 | — | — | 10 (26%) |
| | Total: | 3 | 2 | 3 | 13 | 15 | 2 | 38 |
| Postcranial skeletons | Males | — | — | 1 | — | 5 | — | 6 (32%) |
| | Females | — | — | — | 1 | 5 | — | 6 (32%) |
| | Undeterminable | — | 1 | 2 | — | 4 | — | 7 (36)%) |
| | Total: | — | 1 | 3 | 1 | 14 | — | 19 |
| Well preserved crania (measured) | Males | — | — | — | 10 | 16 | 1 | 27 (34%) |
| | Females | — | — | 1 | 24 | 9 | 4 | 38 (48%) |
| | Undeterminable | 2 | 7 | 5 | — | — | — | 14 (18%) |
| | Total: | 2 | 7 | 6 | 34 | 25 | 5 | 79 |
| | Sum-total: | 5 (3,7%) | 10 (7,3%) | 12 (8,9%) | 48 (35,3%) | 54 (39,7%) | 7 (5,1%) | 136 |

*Table 2.* Szekszárd—Palánk, avar period

| No. of measurements (Martin) | Measurements and indices | Males | | | | Females | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | N | V | M | s | N | V | M | s |
| 1. | Glabello-occipital length | 21 | 175—200 | 184,1 | 6,18 | 34 | 163—183 | 174,2 | 4,18 |
| 8. | Maximum breadth of cranium | 22 | 128—162 | 146,1 | 7,96 | 35 | 128—151 | 141,0 | 5,84 |
| 9. | Minimum frontal breadth | 25 | 89—109 | 99,3 | 4,22 | 35 | 89—104 | 95,8 | 4,03 |
| 17. | Basion-bregma height | 14 | 131—144 | 137,1 | 3,58 | 22 | 118—140 | 130,3 | 4,96 |
| 38. | Cranial capacity | 12 | 1340—1660 | 1561,8 | 101,20 | 17 | 1120—1450 | 1323,8 | 98,20 |
| 45. | Bizygomatic breadth | 17 | 121—147 | 134,7 | 6,58 | 22 | 118—139 | 126,7 | 5,02 |
| 47. | Face height | 13 | 106—131 | 119,6 | 7,68 | 23 | 101—119 | 110,6 | 4,71 |
| 48. | Upper face height | 22 | 58—81 | 70,7 | 5,56 | 30 | 58—75 | 67,1 | 4,21 |
| 72. | Total facial angle | 14 | 77°—91° | 83,6 | 4,86 | 13 | 81°—90° | 85,6 | 2,39 |
| 8:1 | Cranial index | 18 | 68—91 | 79,3 | 5,86 | 30 | 72—89 | 81,3 | 4,66 |
| 17:1 | Length-height index | 12 | 70—79 | 74,3 | 2,89 | 17 | 69—82 | 74,8 | 3,05 |
| 17:8 | Breadth-height index | 14 | 80—101 | 94,2 | 5,96 | 20 | 84—98 | 93,7 | 3,96 |
| 9:8 | Fronto-parietal index | 20 | 61—75 | 67,3 | 4,16 | 30 | 62—74 | 68,1 | 2,86 |
| 47:45 | Facial index | 10 | 82—97 | 87,5 | 4,61 | 16 | 82—99 | 88,1 | 4,76 |
| 48:45 | Upper facial index | 15 | 47—57 | 52,3 | 3,12 | 19 | 46—62 | 53,9 | 4,31 |
| 52:51 | Orbital index | 23 | 70—92 | 81,8 | 5,14 | 28 | 80—100 | 87,4 | 5,51 |
| 54:55 | Nasal index | 19 | 36—65 | 49,8 | 6,18 | 26 | 39—59 | 49,3 | 4,72 |
| | Calculated stature | 27 | 160—176 | 167,0 | 3,97 | 34 | 146—165 | 155,5 | 4,14 |

*Table 3.* Szekszárd—Palánk avar period
Distribution of the principal metrical characters

| Characters | | | Males | Females | Total |
|---|---|---|---|---|---|
| 8:1 Cranial index | Dolichokranic | 70—74,9 | 3 (17%) | 4 (13%) | 7 (15%) |
| | Mesokranic | 75—79,9 | 6 (33%) | 8 (27%) | 14 (29%) |
| | Brachykranic | 80—84,9 | 5 (28%) | 10 (33%) | 15 (31%) |
| | Hyperbrachykranic | 85—89,9 | 3 (16%) | 8 (27%) | 11 (23%) |
| | Ultrabrachykranic | 90—x | 1 (6%) | — | 1 (2%) |
| | | Total: | 18 | 30 | 48 |
| 17:1 Length-height index | Chamaekranic | x—69,9 | — | 1 (6%) | 1 (3%) |
| | Orthokranic | 70—74,9 | 7 (58%) | 9 (53%) | 16 (55%) |
| | Hypsikranic | 75—x | 5 (42%) | 7 (41%) | 12 (41%) |
| | | Total: | 12 | 17 | 29 |
| 17:8 Breadth-height index | Tapeinokranic | x—91,9 | 4 (29%) | 7 (35%) | 11 (32%) |
| | Metriokranic | 92—97,9 | 8 (57%) | 12 (60%) | 20 (59%) |
| | Akrokranic | 98—x | 2 (14%) | 1 (5%) | 3 (9%) |
| | | Total: | 14 | 20 | 34 |
| 9:8 Fronto-parietal index | Stenometopic | x—65,9 | 7 (35%) | 5 (17%) | 12 (24%) |
| | Metriometopic | 66—68,9 | 2 (10%) | 11 (37%) | 13 (26%) |
| | Eurymetopic | 69—x | 11 (55%) | 14 (46%) | 25 (50%) |
| | | Total: | 20 | 30 | 50 |
| 47:45 Facial index | Euryprosopic | 80—84,9 | 2 (20%) | 4 (25%) | 6 (23%) |
| | Mesoprosopic | 85—89,9 | 5 (50%) | 6 (38%) | 11 (42%) |
| | Leptoprosopic | 90—94,9 | 2 (20%) | 5 (31%) | 7 (27%) |
| | Hyperleptoprosopic | 95—x | 1 (10%) | 1 (6%) | 2 (8%) |
| | | Total: | 10 | 16 | 26 |
| 48:45 Upper facial index | Euryene | 45—49,9 | 3 (20%) | 4 (21%) | 7 (21%) |
| | Mesene | 50—54,9 | 7 (47%) | 7 (37%) | 14 (41%) |
| | Leptene | 55—59,9 | 5 (33%) | 7 (37%) | 12 (35%) |
| | Hyperleptene | 60—x | — | 1 (5%) | 1 (3%) |
| | | Total: | 15 | 19 | 34 |
| 52:51 Orbital index | Chamaekonch | x—75,9 | 2 (9%) | — | 2 (4%) |
| | Mesokonch | 76—84,9 | 14 (61%) | 12 (43%) | 26 (51%) |
| | Hypsikonch | 85—x | 7 (30%) | 16 (57%) | 23 (45%) |
| | | Total: | 23 | 28 | 51 |
| 54:55 Nasal index | Leptorrhine | x—46,9 | 4 (21%) | 7 (27%) | 11 (24%) |
| | Mesorrhine | 47—50,9 | 9 (47%) | 8 (31%) | 17 (38%) |
| | Chamaerrhine | 51—57,9 | 4 (21%) | 10 (38%) | 14 (31%) |
| | Hyperchamaerrhine | 58—x | 2 (11%) | 1 (4%) | 3 (7%) |
| | | Total: | 19 | 26 | 45 |
| 38 Cranial capacity | | Males / Females | | | |
| | Oligencephalic | x—1300 / x—1150 | — | 2 (12%) | 2 (7%) |
| | Euencephalic | 1301—1450 / 1151—1300 | 3 (25%) | 3 (18%) | 6 (21%) |
| | Aristencephalic | 1451—x / 1301—x | 9 (75%) | 12 (70%) | 21 (72%) |
| | | Total: | 12 | 17 | 29 |

*Table 3*

| Characters | | | Males | Females | Total |
|---|---|---|---|---|---|
| 72 Total angle facial | Prognathous..... | 70°—79° | 4 (29%) | — | 4 (15%) |
| | Mesognathous ..... | 80°—84° | 4 (29%) | 5 (38%) | 9 (33%) |
| | Orthognathous ..... | 85°—92° | 6 (42%) | 8 (62%) | 14 (52%) |
| | | Total: | 14 | 13 | 27 |
| | | Males / Females | | | |
| Calculated stature | Short..... | 150—159,9 / 140—148,9 | — | 2 (6%) | 2 (3%) |
| | Short medium... | 160—163,9 / 149—152,9 | 6 (22%) | 4 (12%) | 10 (16%) |
| | Medium ... | 164—166,9 / 153—155,9 | 6 (22%) | 13 (38%) | 19 (31%) |
| | Tall medium | 167—169,9 / 156—158,9 | 8 (30%) | 6 (18%) | 14 (23%) |
| | Tall ..... | 170—179,9 / 159—167,9 | 7 (26%) | 9 (26%) | 16 (26%) |
| | | Total: | 27 | 34 | 61 |

was carried out not in a continuous area and, what is more, the uncovered territory is only a part of the cemetery.

The most important parameters are contained in Table 2 and the distribution of the main metric characters in Table 3. The individual metric data of males and females are to be found as an appendix to the paper. The enumeration of the rather numerous fragmentary material is omitted.

The *general characterisation of the series* is given on the basis of males. The cranium is of medium length, medium breadth, the mean of cranial index is approaching the upper limit of mesocrany. On the basis of index categories we can speak of some predominance of mesocrany and brachycrany. The cranium is higher than medium-sized, ortho-hypsicranic, resp. metriocranic. In vertical norm the cranial contour is highly various, with slight preponderance of the ovoid form. The forehead is of medium breadth, as to the transversal-frontoparietal index, the males are in two groups: the stenometopic and eurymetopic ones. The glabella is of 2 to 4 degree (Broca). The value of cranial capacity is, owing to the low case-number, better to be disregarded. The zygomatic arch is of medium breadth, the upper face is of medium height and on the basis of upper-face index mesene. Mesoconchy and mesorrhiny occur very often. The mean value of the facial profile falls to the category of mesognathia but prognathic and orthognathic facial profiles are to be found, as well. The mean of the calculated stature is at the border of medium and tall medium; the most frequent categories are the tall medium and tall stature.

With regard to the higher frequencies, the general characteristics of the females of the sample is more reliable. The cranium is of medium length, of medium breadth. On the basis of the mean of cranial index they are mesocranic; on the basis of index categories the relative preponderance of brachycrany is characteristic. The cranium is higher than medium, being ortho-hypsicranic, resp. metriocranic. With regard to the vertical cranial contour, the firm prevalence of the sphenoid form is characteristic. The forehead is of medium breadth. On the basis of the transversal-frontoparietal index it is metrio-eurymetopic. The glabella is mostly of 1 to 2 degrees (Broca). The cranial capacity is, on the basis of the mean, bigger than medium-sized, aristencephaly is prevalent. The face is of medium breadth, medium height, meso-

leptoprosopic, resp. mesene-leptene. The orbits are, in case of females, considerably high, being prevalently hypsiconchic. In respect of the nasal index, they are more often meso-chamaerrhine. The fossa canina agrees with that of males. The facial profile, established in a comparatively low number of cases, is meso-orthognathous. A medium alveolar prognathism is characteristic. The stature is very variable, the most frequent one being the middle-sized and tall stature category.

*Table 4.* Szekszárd—Palánk, avar period

| Taxonomic analysis | | Males | Females | Total |
|---|---|---|---|---|
| Brachycephals | Undetermined (br) | 4 | 9 | 13 (27%) |
| | Pamirian (p) | 1 | 5 | 6 (13%) |
| | Alpine, Lappid (a, l) | — | 3 | 3 (6%) |
| | Sum-total: | 5 | 17 | 22 (46%) |
| Nordic, Atlanto-Mediterranean (n) | | 7 | 5 | 12 (25%) |
| Gracile-Mediterranean (m) | | 2 | 4 | 6 (13%) |
| Cromagnoids (crA, crB) | | 3 | 1 | 4 (8%) |
| Turano-Mongoloids (t, moid) | | 1 | 3 | 4 (8%) |
| | Total: | 18 | 30 | 48 |

The result of *taxonomic analysis* is contained in Table 4. The group of Brachycephals (br) amounts together to 46 per cent of the whole series. An undeterminable brachycephalic component prevails, and in addition to that, there can be established Pamirian, Alpine and Lappid elements. In case of females, the Brachycephals are expressly predominating. The Nordoid, that is to say Nordic-Atlantomediterranean (n) taxon is giving together 25 per cent of the series. In case of males, its percentage is more considerable. The gracile Mediterranean (m) race can be demonstrated, too, as a rather considerable component. — Besides the above-mentioned taxons, the Cromagnoids as well as the Turanids and on — in detail not determinable — Mongoloid component can be diagnosed in this series.

It was suitable, to compare the taxonomical analysis — carried out in adult crania of good state of preservation — with the archaeological results. At my request, ÁGNES SALAMON has elaborated the archaeological groups resp. periods, according to graves, established on the basis of her detailed archaeological study, to be published at a future date. The males belonging to the first period are characterized by a stamped plate girdle set; the most numerous is the second or middle group, characterized — together with the third group — by a cast girdle set (griffin and tendril group). As the number of adult skeletons in a good state of preservation is comparatively not high, and as there were graves without any archaeological grave goods or at least without significant ones, the following results have developed for information:

a) the dolichocephals of tall stature are characteristic of the early (stamped plate girdle set) group, and there could be found some individuals showing Mongoloid features, as well, only in that group;

b) the brachycephalic components, among them the representatives of the Pamirian race are first of all characteristic of the "griffin and tendril" group.

*Table 5. Szekszárd—Palánk, avar-period: Males (1)*

| No. of measure-ments (Martin) | Measurements and indices | 1. 10 212 Mat. | 2. 10 213 Juv-Ad. | (11.) 10 216 Ad. | 12. 10 218 Ad. | 21. 10 222 Ad. | 29. 10 225 Mat. | 38. 10 232 Mat. | 70. 10 354 Mat. | 78. 10 358 Mat. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Glabello-occipital length | 181 | 180 | — | — | 200 | 193 | 178 | (175) | — |
| 1c. | Metopium occipital length | | 178 | 180 | — | — | 191 | 188 | 176 | 173 |
| 5. | Basion-nasion length | — | 100 | — | — | 111 | 107 | 104 | — | — |
| 8. | Maximum breadth of cranium | 146 | 137 | — | — | 142 | 141 | 162 | — | — |
| 9. | Minimum frontal breadth | 101 | 96 | 98 | 101 | 102 | 106 | 102 | 102 | 97 |
| 17. | Basion-bregma height | — | 132 | — | — | 142 | 137 | 131 | — | — |
| 20. | Porion bregma height | 116 | 111 | — | — | 115 | 112 | 111 | — | — |
| 32/1-a. | Frontal angle | 47° | 48° | — | — | 45° | 45° | 43° | — | — |
| 38. | Cranial capacity | — | 1340 | — | — | 1586 | 1500 | 1590 | — | — |
| 40. | Sup. facial length | — | 92 | — | — | 111 | 107 | 108 | — | — |
| 45. | Bizygomatic breadth | (130) | 125 | — | — | 141 | 142 | 144 | — | — |
| 46. | Maxillar breadth | 95 | 95 | — | 100 | 96 | — | 96 | — | 92 |
| 47. | Total facial height | — | 107 | 131 | — | 120 | — | — | — | 116 |
| 48. | Upper facial height | 67 | 69 | 80 | 67 | 74 | 81 | 75 | 69 | 69 |
| 51. | Orbital breadth | 38 | 37 | 38 | 40 | 39 | 42 | 41 | 41 | 39 |
| 52. | Orbital height | 31 | 32 | 35 | 31 | 32 | 35 | 36 | 33 | 35 |
| 54. | Nasal breadth | — | — | 21 | 24 | 24 | 27 | 26 | 25 | 25 |
| 55. | Nasal height | 51 | 48 | 57 | 45 | 52 | 54 | 54 | 47 | 50 |
| 62. | Palatal length | 45 | — | — | 48 | 57 | 49 | 53 | — | 49 |
| 63. | Palatal breadth | — | 37 | — | 46 | 44 | — | — | — | 43 |
| 65. | Bicondylar-diameter | — | 112 | — | — | (121) | — | — | — | — |
| 66. | Bigonial-diameter | — | 95 | — | — | 107 | — | (108) | — | — |
| 69. | Mental height | (25) | 32 | 38 | — | 35 | — | (32) | — | 32 |
| 70. | Ramus height | 68 | 57 | — | — | 76 | — | 75 | — | — |
| 71. | Ramus breadth | — | 34 | 35 | — | 35 | — | 34 | — | 30 |
| 72. | Total facial angle | 84° | 89° | — | — | 78° | 78° | 77° | — | — |
| 8:1 | Cranial index | 80,7 | 76,1 | — | — | 71,0 | 73,1 | 91,0 | — | — |
| 17:1 | Length-height index | — | 73,3 | — | — | 71,0 | 71,0 | 73,6 | — | — |
| 17:8 | Breadth-height index | — | 96,4 | — | — | 100,0 | 97,2 | 80,9 | — | — |
| 9:8 | Transvers. frontopar. index | 69,2 | 70,1 | — | — | 71,8 | 75,2 | 62,9 | — | — |
| 47:45 | Facial index | — | 85,6 | — | — | 85,1 | — | — | — | — |
| 48:45 | Upper facial index | 51,5 | 55,2 | — | — | 52,5 | 57,0 | 52,1 | — | — |
| 52:51 | Orbital index | 81,6 | 86,5 | 92,1 | 77,5 | 82,1 | 83,3 | 87,8 | 80,5 | 89,7 |
| 54:55 | Nasal index | — | — | 36,8 | 53,3 | 46,2 | 50,0 | 48,2 | 53,2 | 50,0 |
| 63:62 | Palatal index | — | — | — | 95,8 | 77,2 | — | — | — | 87,8 |
| Norma verticalis | | Ovoid | Pent. | Ovoid | — | Ell. | Ell. | Szfer. | Szfer. | — |
| Glabella | | 1 | 1 | 2 | 2—3 | 3 | 3 | 2 | 2 | 2 |
| Protuberantia occipitalis externa | | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | — |
| Fossa cania | | 2 | 2 | 1 | 3 | 2 | 2 | 4 | 4 | 2 |
| Spina nasalis anterior | | 2 | 2 | 2 | 2 | 1 | 3 | 3 | 1 | 4 |
| Alveolar prognathism | | 3 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 |
| Calculated stature | | — | 166 | 165 | — | — | — | 170 | 169 | 167 |
| Taxon | | br | — | — | crB | — | n—x | p | — | n—x |

*Table 5.* Szekszárd—Palánk, avar period: Males (2)

| No. of measurements (MARTIN) | 99. 10 369 Mat | 106. 10 373 Ad. | (124.) 10 380 Mat. | 136. 10 392 Ad. | 139. 10 395 Ad. | 155. 10 399 Mat. | — 10 410 Ad. | — 10 414 Mat. | — 10 415 Mat. | 176. 10 417 Mat. | 181. 10 419 Mat. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 176 | 178 | 180 | 180 | 183 | (193) | — | — | 179 | 185 | — |
| 1c. | 174 | 178 | 177 | 168 | 174 | — | 172 | 178 | 174 | 182 | — |
| 5. | 105 | 103 | 99 | — | 109 | 110 | 99 | 98 | 97 | (105) | — |
| 8. | 148 | 155 | 140 | 155 | 142 | — | 136 | 148 | 151 | 158 | 155 |
| 9. | 93 | 97 | 98 | 96 | 89 | 99 | — | 103 | 96 | 105 | 109 |
| 17. | 136 | (142) | 137 | — | 136 | — | 138 | 137 | 140 | (136) | — |
| 20. | 109 | — | 117 | — | 112 | — | 111 | 118 | — | — | — |
| 32/1-a. | 45° | — | 52° | 49° | 52° | — | 54° | 56° | — | — | — |
| 38. | 1489 | (1647) | 1423 | — | 1396 | — | — | — | 1553 | (1657) | — |
| 40. | 98 | — | 102 | — | (107) | 105 | 95 | 91 | — | — | — |
| 45. | 135 | — | 135 | 147 | 133 | — | 129 | 130 | — | — | — |
| 46. | 103 | — | 102 | 108 | 99 | 99 | 94 | 101 | — | 99 | — |
| 47. | 115 | — | 124 | 124 | 114 | 125 | 106 | — | — | — | — |
| 48. | 69 | — | 75 | 72 | 63 | 78 | 65 | 70 | — | 66 | (68) |
| 51. | 40 | 33 | 40 | 39 | 39 | 44 | 39 | 45 | — | 42 | 40 |
| 52. | 32 | 30 | 35 | 34 | 31 | 32 | 30 | — | — | 33 | 33 |
| 54. | 27 | — | 25 | 28 | 26 | 26 | 26 | 25 | — | — | 26 |
| 55. | 45 | — | 50 | 45 | — | 52 | 46 | — | — | — | — |
| 62. | 53 | — | 52 | 55 | 52 | 55 | 48 | 48 | — | 52 | 52 |
| 63. | — | — | 44 | 44 | 41 | 42 | 40 | — | — | — | — |
| 65. | — | — | 123 | 136 | 126 | — | 109 | — | — | — | — |
| 66. | — | 104 | 101 | 115 | 108 | 111 | 107 | — | — | 101 | — |
| 69. | (29) | 38 | 40 | 34 | 32 | 39 | 29 | — | — | (26) | — |
| 70. | — | 65 | 72 | 63 | 75 | 70 | 75 | — | — | 62 | — |
| 71. | — | 27 | 35 | 32 | 33 | 33 | 32 | — | — | 32 | 33 |
| 72. | 85° | — | 81° | 89° | 81° | — | 80° | (90°) | — | — | — |
| 8:1 | 84,1 | 87,1 | 77,8 | 86,1 | 77,6 | — | — | — | 84,4 | 85,4 | — |
| 17:1 | 77,3 | 79,8 | 76,1 | — | 73,8 | — | — | — | 78,2 | 73,5 | — |
| 17:8 | 91,9 | 91,6 | 97,9 | — | 95,1 | — | 101,5 | 92,6 | 92,7 | 86,1 | — |
| 9:8 | 62,8 | 62,6 | 70,0 | 61,9 | 62,7 | — | — | 69,6 | 63,6 | 66,5 | 70,3 |
| 47:45 | 85,2 | — | 91,9 | 84,4 | 85,7 | — | 82,2 | — | — | — | — |
| 48:45 | 51,1 | — | 55,6 | 49,0 | 47,4 | — | 50,4 | 53,9 | — | — | — |
| 52:51 | 80,0 | 90,9 | 87,5 | 87,2 | 79,5 | 72,7 | 76,9 | — | — | 78,6 | 82,5 |
| 54:55 | 50,9 | — | 48,1 | 50,9 | 59,6 | 47,3 | 54.2 | 52,1 | — | — | 50,0 |
| 63:62 | — | — | 88,0 | 97,8 | — | 80,8 | 86,9 | — | — | — | — |
| Norma verticalis | Pent. | Szfer. | Ell. | Szfer. | Ovoid | Ovoid | Pent. | Szfen. | Ovoid | Pent. | Szfer. |
| Glabella | 3 | 4 | 4—5 | 3 | 4 | 4 | 4 | — | 5 | 2 | 3 |
| Prot. occ. ext. | 2 | 0 | 2 | 0 | 0 | — | 1 | 3 | 1 | 0 | — |
| Fossa canina | 3 | — | 5 | 1 | 2 | 3 | 3 | 3 | — | 4 | 2 |
| Spina nas. ant. | 2 | — | 4 | 2 | 1 | 1 | 2 | — | — | 1 | 1 |
| Alv. prognathism | 3 | — | 2 | 2 | 2 | 2 | 2 | 1 | — | 2 | 2 |
| Termet | 166 | 160 | — | — | — | 166 | — | — | — | — | — |
| Taxon | br—x | — | m—n | t—x | (?)-moid | n | m—cr | — | br | crB | — |

*Table 5.* Szekszárd—Palánk, avar period: Males (3)

| No. of measurements (MARTIN) | 188/2. 10 425 Ad. | 195. 10 429 Mat. | 209. 11 642 Sen. | 211. 11 644 Ad. | 213. 11 645 Mat. | 225. 11 653 Mat. |
|---|---|---|---|---|---|---|
| 1. | 187 | 183 | 186 | 186 | 190 | 187 |
| 1c. | 191 | 177 | 179 | 186 | 185 | 183 |
| 5. | — | 105 | — | (110) | — | 105 |
| 8. | 128 | 140 | 150 | 149 | 145 | 141 |
| 9. | 95 | 98 | 96 | 101 | 102 | 99 |
| 17. | — | — | — | 144 | — | 132 |
| 20. | 117 | — | — | 119 | — | 118 |
| 32/1-a. | 52° | — | — | 49° | — | 48° |
| 38. | — | — | — | 1660 | — | 1595 |
| 40. | — | 95 | — | (95) | — | 93 |
| 45. | 121 | 131 | (133) | (133) | 141 | 135 |
| 46. | 90 | 94 | — | 97 | — | 99 |
| 47. | — | 115 | — | 126 | — | 131 |
| 48. | 58 | 70 | — | 75 | — | (77) |
| 51. | 41 | 43 | — | 46 | 42 | 45 |
| 52. | 29 | 33 | (34) | 36 | 35 | 38 |
| 54. | 28 | 25 | — | 23 | — | 24 |
| 55. | 43 | 50 | — | 59 | — | 55 |
| 62. | — | — | — | — | — | (55) |
| 63. | — | 40 | — | 40 | — | — |
| 65. | — | — | — | 125 | — | 119 |
| 66. | — | — | — | 103 | — | 108 |
| 69. | — | — | — | (35) | — | 35 |
| 70. | — | 70 | — | 72 | — | 67 |
| 71. | — | 32 | — | 32 | — | 28 |
| 72. | 79° | — | — | 88° | — | (91°) |
| 8:1 | 68,5 | 76,5 | 80,7 | 80,1 | 76,3 | 75,4 |
| 17:1 | — | — | — | 77,4 | — | 70,6 |
| 17:8 | — | — | — | 96,6 | — | 93,6 |
| 9:8 | 74,2 | 70,0 | 64,0 | 67,8 | 70,3 | 70,2 |
| 47:45 | — | 87,8 | — | (94,7) | — | 97,0 |
| 48:45 | 47,9 | 53,4 | — | (56,4) | — | (57,0) |
| 52:51 | 70,7 | 76,7 | — | 78,3 | 83,3 | 84,4 |
| 54:55 | 65,1 | 50,0 | — | 39,0 | — | 43,6 |
| 63:62 | — | — | — | — | — | — |
| Norma verticalis | Ell. | Ovoid | Szphen. | Szphen. | Szphen. | Ovoid |
| Glabella | 2 | 3 | 2 | 3 | 2 | 2 |
| Prot. occ. ext. | 0 | 1 | 0 | 0 | — | 1 |
| Fossa canina | 4 | 2 | 3 | 2 | 3 | 3 |
| Spina nas. ant. | 1 | 2 | — | 2 | 2 | — |
| Av. prognathism | 3 | 2 | — | 1 | 2 | — |
| Stature | — | 173 | 162 | 169 | 176 | 170 |
| Taxon | crA—x | n—x | — | br—x | n—x | n |

*Table 6.* Szekszárd—Palánk, avar period: Females (1)

| No. of measurements (MARTIN) | Measurements and indices | (13.) 10 219 Mat. | 15. 12 220 Ad. | 20. 10 221 Ad. | 30. 10 226 Ad. | 32. 10 228 Ad. | 37. 10 231 Mat-Sen. | 44. 10 235 Ad. | 45. 10 236 Ad. | 49. 10 353 Ad. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Glabello-occipital length | — | 175 | (181) | 168 | 171 | 173 | 169 | — | 179 |
| 1c. | Metopion-occipital length | 173 | 173 | — | 165 | 171 | 175 | 164 | — | 180 |
| 5. | Basion-nasion length | 93 | — | — | 97 | 91 | 97 | 100 | 92 | 97 |
| 8. | Maximum breadth of cranium | 140 | 144 | 140 | 140 | 131 | 141 | 132 | 140 | 140 |
| 9. | Minimum frontal breadth | 98 | 101 | — | 96 | 93 | 99 | 92 | 98 | 94 |
| 17. | Basion-bregmaheight | 130 | — | — | 128 | 128 | 127 | 124 | 130 | 134 |
| 20. | Porion bregma height | 112 | — | — | 111 | 109 | 113 | — | 111 | — |
| 32/1-a. | Frontal angle | 48° | — | — | 48° | 52° | 49° | — | 43° | — |
| 38. | Cranial capacity | 1326 | — | — | 1240 | 1171 | 1326 | 1134 | — | 1423 |
| 40. | Sup. facial length | (86) | — | — | 98 | 84 | 92 | — | 90 | — |
| 45. | Bizygomatic breadth | 130 | — | — | — | 122 | 128 | — | 118 | — |
| 46. | Maxillar breadth | 95 | 92 | 89 | 96 | 91 | 88 | — | 90 | — |
| 47. | Total facial height | — | — | — | 115 | 114 | 109 | — | 101 | — |
| 48. | Upper facial height | — | 68 | — | 73 | 67 | 67 | — | 58 | 62 |
| 51. | Orbital breadth | 38 | 39 | 37 | 39 | 36 | 40 | — | 37 | 37 |
| 52. | Orbital height | 31 | 35 | 34 | 36 | 33 | 32 | — | 33 | 31 |
| 54. | Nasal breadth | (26) | 24 | 25 | 24 | 26 | 25 | — | 22 | — |
| 55. | Nasal height | 49 | 49 | — | 51 | 57 | 48 | — | 39 | — |
| 62. | Palatal length | — | 45 | — | 44 | 42 | 44 | — | — | — |
| 63. | Palatal breadth | 44 | 37 | 39 | 41 | — | 38 | — | 40 | 44 |
| 65. | Bicondylar-diameter | — | — | — | 116 | 112 | — | — | 110 | — |
| 66. | Bigonial-diameter | — | — | — | 98 | — | — | — | 92 | (95) |
| 69. | Mental height | — | — | (33) | 33 | 29 | 30 | 28 | 27 | 29 |
| 70. | Ramus height | — | — | 63 | 61 | 67 | — | 52 | 65 | — |
| 71. | Ramus breadth | — | — | 35 | 34 | 27 | 27 | 28 | 30 | 31 |
| 72. | Total facial angle | 88° | — | — | 81° | 85° | 85° | — | 83° | — |
| 8:1 | Cranial index | — | 82,3 | 77,4 | 83,3 | 76,6 | 81,5 | 78,1 | — | 78,2 |
| 17:1 | Length-height index | — | — | — | 76,2 | 74,9 | 73,4 | 73,4 | — | 74,9 |
| 17:8 | Breadth-height index | 92,9 | — | — | 91,4 | 97,7 | 90,1 | 93,9 | 92,9 | 95,7 |
| 9:8 | Transvers. . frontopar. index | 70,0 | 70,1 | — | 68,6 | 71,0 | 70,2 | 69,7 | 70,0 | 67,1 |
| 47:45 | Facial index | — | — | — | — | 93,4 | 85,2 | — | 85,6 | — |
| 48:45 | Upper facial index | — | — | — | — | 54,9 | 52,3 | — | 49,2 | — |
| 52:51 | Orbital index | 81,6 | 89,7 | 91,9 | 92,3 | 91,7 | 80,0 | — | 89,2 | 83,8 |
| 54:55 | Nasal index | 53,1 | 49,0 | — | 47,1 | 45,6 | 52,1 | — | 56,4 | — |
| 63:62 | Palatal index | — | 82,2 | — | 93,2 | — | 86,4 | — | — | — |
| Norma verticalis | | Ovoid | Pent. | Ell. | Szfer. | Szfen. | Ovoid | Pent. | Szfen. | Ell. |
| Glabella | | 1 | 2 | — | 1 | 1 | 1 | 2 | 1 | 2 |
| Protuberantia occipitalis externa | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Fossa canina | | 1 | 3 | 3 | 2 | 2 | 3 | — | 3 | 2 |
| Spina nasalis anterior | | — | 1 | 1 | 3 | 1 | 2 | — | — | 1 |
| Alveolar prognathism | | 1 | 2 | 3 | 2 | 1 | 2 | 2 | 2 | 3 |
| Calculated stature | | — | — | — | 153 | 155 | 155 | 151 | — | 153 |
| Taxon | | moid | (br(p) | — | br(p) | n | br—x | — | br | crA |

*Table 6.* Szekszárd—Palánk, avar period: Females (2)

| No. of measurements (MARTIN) | 73. 10 355 Ad. | 74. 10 356 Ad. | 86. 10 362 Mat. | 95. 10 366 Mat. | 97. 10 367 Ad. | 98. 10 368 Mat. | 125. 10 382 Ad. | 134. 10 390 Mat. | 137. 10 393 Ad. | 146. 10 397 Mat. | 158. 10 400 Ad. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 171 | 174 | 166 | 181 | — | 169 | 179 | 174 | 170 | 175 | — |
| 1c. | 164 | 171 | 164 | 184 | — | 169 | 177 | 170 | 164 | 174 | — |
| 5. | (91) | 101 | — | — | 99 | 100 | 96 | 101 | 100 | — | — |
| 8. | 136 | 141 | 129 | 134 | 141 | — | (135) | 146 | 145 | 128 | — |
| 9. | 89 | 94 | 93 | 93 | 92 | 90 | 93 | 102 | 97 | 95 | 96 |
| 17. | (118) | 131 | — | — | 139 | 129 | 128 | 133 | 140 | — | — |
| 20. | — | 108 | — | — | — | — | — | 111 | 121 | 109 | — |
| 32/1-a. | — | 44° | — | — | — | — | — | 46° | 51° | 46° | — |
| 38. | (1120) | 1326 | — | — | — | — | (1258) | 1409 | 1409 | — | — |
| 40. | (92) | 95 | — | — | 93 | 96 | 91 | 96 | 98 | — | — |
| 45. | 123 | 128 | 121 | (118) | (123) | — | — | 129 | 128 | 123 | — |
| 46. | 91 | 93 | 82 | 92 | 88 | 87 | 89 | 92 | 95 | — | — |
| 47. | 103 | 109 | 111 | (117) | 115 | 104 | — | 114 | 117 | — | — |
| 48. | 65 | 68 | 67 | 73 | 73 | 67 | (61) | 75 | 69 | 69 | 68 |
| 51. | 37 | — | 35 | 40 | 38 | 38 | 37 | 39 | 39 | 39 | 38 |
| 52. | 33 | 32 | 34 | 33 | 38 | 33 | 30 | 36 | 33 | 33 | 34 |
| 54. | 23 | 24 | 24 | 24 | 24 | 24 | 25 | 25 | 25 | 22 | — |
| 55. | 48 | 48 | 50 | 51 | 52 | 45 | 42 | 57 | 47 | 52 | 51 |
| 62. | 44 | 44 | — | — | 43 | 42 | 43 | 45 | 44 | — | — |
| 63. | 36 | 44 | — | — | 42 | 35 | — | 40 | 42 | — | — |
| 65. | (113) | — | — | — | 112 | 117 | — | 115 | 111 | 126 | — |
| 66. | (88) | — | — | (91) | 96 | 91 | — | 101 | 94 | — | — |
| 69. | 25 | 32 | — | 39 | 29 | 32 | — | 32 | 32 | 27 | — |
| 70. | 58 | 62 | 66 | 58 | 66 | 59 | — | 65 | 71 | 64 | — |
| 71. | 30 | 32 | 26 | 30 | 28 | 30 | — | 28 | 34 | 29 | — |
| 72. | — | 84° | — | — | — | — | — | 83° | 84° | 88° | — |
| 8:1 | 79,5 | 81,0 | 77,7 | 74,0 | — | — | 75,4 | 83,9 | 85,3 | 73,1 | — |
| 17:1 | 69,0 | 77,0 | — | — | — | 76,3 | 71,5 | 76,4 | 82,4 | — | — |
| 17:8 | 86,8 | 92,9 | — | — | 98,6 | — | 94,8 | 91.1 | 96,6 | — | — |
| 9:8 | 65,4 | 66,7 | 72,1 | 69,4 | 65,3 | — | 68,9 | 69,9 | 66,9 | 74,2 | — |
| 47:45 | 83,7 | 85,3 | 91,7 | 99,2 | 93,5 | — | — | 88,4 | 91,4 | — | — |
| 48:45 | 52,8 | 53,1 | 55,4 | 62,4 | 59,4 | — | — | 58,1 | 53,9 | 56,1 | — |
| 52:51 | 89,2 | — | 97,1 | 82,5 | 100,0 | 86,8 | 81,1 | 92,3 | 84,6 | 84,6 | 89,5 |
| 54:55 | 47,9 | 50,0 | 48,0 | 47,1 | 46,2 | 53,3 | 59,5 | 43,9 | 53,2 | 42,3 | — |
| 63:62 | 81,8 | 100,0 | — | — | 97,7 | 83,3 | — | 88,9 | 95,5 | — | — |
| Norma verticalis | Szfen. | Szfer. | Szfen. | Pent. | Ell. | Szfen. | Ovoid | Pent. | Szfen. | Ell. | — |
| Glabella | 2 | 1 | 1 | 1—2 | 2 | 1 | 3 | 1 | 2 | 2 | 1 |
| Prot. occ. ext. | 0 | 0 | 1 | 1 | — | 0 | 0 | 0 | 0 | 1 | — |
| Fossa canina | 3 | 2 | 3 | 4 | 3 | 2 | 3 | 2 | 1 | 1 | 2 |
| Spina nas. ant. | 1 | 2 | — | 3 | 1 | 1 | 2 | 1 | 4 | 2 | 1 |
| Alv. prognathism | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| Calculated stature | — | 157 | — | — | 154 | 159 | 150 | 158 | 155 | 154 | — |
| Taxon | m—x | br—x | m—x | n | br(?) | n—x | m—x | t | p | m | (moid) |

*Table 6.* Szekszárd—Palánk, avar period: Females (3)

| No. of measurements (MARTIN) | 166. 10 405 Ad. | 167. 10 406 Juv-Ad. | I. 10 237 Ad. | 5. 10 409 Sen. | — 10 411 Ad. | 177. 10 418 Mat. | 180. 10 435 Ad. | 183. 10 421 Ad. | 184. 10 422 Ad. | 188/1. 10 437 Mat. | 192. 10 438 Ad. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 182 | — | 170 | 172 | 175 | 166 | 179 | 183 | — | 182 | 177 |
| 1c. | 181 | — | 169 | 173 | 173 | — | 177 | 182 | — | 182 | 173 |
| 5. | — | — | 99 | 104 | 103 | (92) | — | 101 | — | — | — |
| 8. | — | — | 139 | 147 | 140 | (142) | 151 | 136 | — | 141 | 146 |
| 9. | — | 95 | 92 | 95 | 100 | — | 94 | 97 | 89 | 104 | 100 |
| 17. | — | 125 | 136 | 134 | 131 | — | — | 133 | — | — | — |
| 20. | — | — | 110 | 113 | 115 | — | — | — | — | — | 111 |
| 32/1-a. | — | — | 44° | 51° | 50° | — | — | — | — | — | 53° |
| 38. | — | — | 1335 | 1453 | 1335 | — | — | 1359 | — | — | — |
| 40. | — | — | 88 | — | 96 | — | — | 90 | — | — | — |
| 45. | — | (128) | 123 | 135 | — | — | — | (127) | — | — | 128 |
| 46. | 90 | 92 | 85 | 109 | — | 102 | — | 92 | 86 | — | 94 |
| 47. | (112) | 113 | 105 | — | 115 | 112 | — | 105 | 107 | — | 119 |
| 48. | 70 | 72 | 70 | — | 70 | — | — | 62 | 64 | — | 69 |
| 51. | — | 40 | 38 | 38 | 40 | 38 | — | — | — | — | 38 |
| 52. | — | 33 | 37 | 31 | 33 | 31 | — | — | 32 | — | 33 |
| 54. | — | 25 | 21 | — | 27 | — | — | — | 24 | — | 27 |
| 55. | 57 | 49 | 53 | 51 | 50 | 49 | — | 46 | 47 | — | 49 |
| 62. | — | 45 | 40 | — | 44 | — | — | — | — | — | — |
| 63. | — | 40 | 40 | 44 | 43 | — | — | 38 | 38 | — | 42 |
| 65. | (121) | — | — | — | — | 124 | — | — | — | 119 | — |
| 66. | 96 | — | 95 | — | — | 96 | — | 92 | 92 | 96 | 100 |
| 69. | 29 | 31 | 28 | — | 31 | 33 | 25 | 25 | 32 | — | 33 |
| 70. | 62 | 63 | 59 | — | 65 | 59 | 61 | 62 | 67 | 67 | 71 |
| 71. | 27 | 29 | 28 | — | 33 | 35 | 27 | 28 | 30 | 30 | 30 |
| 72. | — | — | 86° | — | 90° | — | — | — | — | — | 87° |
| 8:1 | — | — | 81,8 | 85,5 | 80,0 | 85,5 | 84,4 | 74,3 | — | 77,5 | 82,5 |
| 17:1 | — | — | 80,0 | 77,9 | 74,9 | — | — | 72,7 | — | — | — |
| 17:8 | — | — | 97,8 | 91,7 | 93,6 | — | — | 97,8 | — | — | — |
| 9:8 | — | — | 66,2 | 64,6 | 71,4 | — | 62,3 | 71,3 | — | 73,8 | 68,5 |
| 47:45 | — | 88,3 | 85,4 | — | — | — | — | 82,7 | — | — | 93,0 |
| 48:45 | — | 56,3 | 56,9 | — | — | — | — | 48,8 | — | — | 53,9 |
| 52:51 | — | 82,5 | 97,4 | 81,6 | 82,5 | 81,6 | — | — | — | — | 86,8 |
| 54:55 | — | 51,0 | 39,6 | — | 54,0 | — | — | — | 51,1 | — | 55,1 |
| 63:62 | — | 88,9 | 100,0 | — | 97,7 | — | — | — | — | — | — |
| Norma verticalis | Szfen. | — | Pent. | Szfen. | Ovoid | Szfer. | Pent. | Szfen. | Szfen. | Szfen. | Szfen. |
| Glabella | 1 | 1 | 1 | 2 | 2 | 1—2 | 2 | 1 | 1 | 1 | 2 |
| Prot. occ. ext. | 0 | — | 2 | 0 | 0 | 0 | 0 | 0 | — | 0 | 0 |
| Fossa canina ..... | 2 | 4 | 3 | 1 | 2 | 2 | — | 1 | 3 | 3 | 2 |
| Spina nas. ant. | 1 | 1 | 2 | — | 1 | — | — | 1 | 1 | 1 | — |
| Alv. prognathism | 2 | 3 | 1 | — | 2 | — | — | 3 | 3 | 3 | 2 |
| Calculated stature | 159 | — | — | — | — | — | 155 | 155 | — | 153 | 162 |
| Taxon | n—x | — | br(p) | p | a—x | br—x | — | n—x | — | — | br |

*Table 6. Szekszárd-Palánk, avar period: Females (4)*

| No. of measurements (MARTIN) | 193. 10 428 Ad. | 196. 10 439 Sen. | 198. 10 440 Ad. | 200. 10 431 Sen. | 215/B. 11 647 Ad. | 230. 11 654 Ad. |
|---|---|---|---|---|---|---|
| 1. | 170 | 171 | 183 | 168 | — | — |
| 1c. | 172 | 166 | 173 | 169 | — | — |
| 5. | 95 | — | 104 | — | — | — |
| 8. | 150 | 148 | 149 | 145 | — | (144) |
| 9. | 99 | 101 | 103 | 98 | 91 | 90 |
| 17. | 127 | — | 126 | — | — | — |
| 20. | 111 | — | — | — | — | — |
| 32/1-a. | 50° | — | — | — | — | — |
| 38. | 1409 | — | 1370 | — | — | — |
| 40. | 90 | — | — | — | — | — |
| 45. | (127) | (139) | 135 | 129 | — | 126 |
| 46. | 91 | 84 | — | — | 88 | 92 |
| 47. | 107 | — | — | — | 102 | 107 |
| 48. | 59 | (64) | 65 | 71 | 64 | 66 |
| 51. | 39 | 38 | — | — | 44 | 36 |
| 52. | 36 | 33 | 33 | 35 | 37 | 34 |
| 54. | 23 | 25 | — | 25 | 24 | 20 |
| 55. | 46 | 49 | 48 | 55 | 48 | 48 |
| 62. | — | — | — | — | 44 | 44 |
| 63. | 40 | — | — | — | 41 | 40 |
| 65. | 114 | — | — | 128 | 116 | 106 |
| 66. | 90 | — | — | 103 | (87) | 95 |
| 69. | 30 | 25 | — | 29 | 27 | 26 |
| 70. | 61 | 68 | 59 | 65 | 66 | 59 |
| 71. | 28 | 29 | 32 | 31 | 26 | 27 |
| 72. | 88 | — | — | — | — | — |
| 8:1 | 88,2 | 86,6 | 81,4 | 86,3 | — | — |
| 17:1 | 74,7 | — | 68,8 | — | — | — |
| 17:8 | 84,7 | — | 84,6 | — | — | — |
| 9:8 | 66,0 | 68,2 | 69,1 | 67,6 | — | (62,5) |
| 47:45 | 84,3 | — | — | — | — | 84,9 |
| 48:45 | 46,5 | — | 48,2 | 55,0 | — | 52,4 |
| 52:51 | 92,3 | 86,8 | — | — | 84,1 | 94,4 |
| 54:55 | 50,0 | 51,0 | — | 45,5 | 50,0 | 41,7 |
| 63:62 | — | — | — | — | 93,2 | 90,9 |
| Norma verticalis | Szfen. | Szfer. | Szfen. | Szfen. | Ell. | Szfen. |
| Glabella | 1 | 3 | 2 | 1 | 4 | 1 |
| Prot. occ. ext. | 1 | 1 | 0 | 0 | 3 | 0 |
| Fossa canina | 4 | 2 | 3 | 2 | 4 | 3 |
| Spina nas. ant. | 4 | — | — | — | 2 | 2 |
| Alv. prognathism | 2 | — | 2 | 2 | 2 | 3 |
| Calculated stature | 148 | 156 | 158 | 156 | 156 | 150 |
| Taxon. | l—a | br—x | br—cr | br | — | a—x |

*Table 7.* Szekszárd—Palánk, avar period: Subadults and infants (1)

| No. of measurements (MARTIN) | Measurements and indices | 4. 10 214 Juv. | 43. 10 234 Inf. II. | 63. 10 349 Juv. | 67. 10 352 Inf. II. | 76. 10 383 Inf. II. | 84. 10 360 Inf. II. | 101. 10 371 Juv. | 129. 10 387 Juv. | 160. 10 401 Inf. I. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Glabello-occipital length | 172 | 167 | 179 | 175 | — | — | 177 | — | 147 |
| 5. | Basion-nasion length | 97 | 92 | 94 | 98 | 94 | — | 95 | — | — |
| 8. | Maximum breadth of cranium | 134 | — | 142 | 136 | 136 | 139 | 133 | (146) | 136 |
| 9. | Minimum frontal breadth | 90 | 91 | 93 | 98 | 94 | 95 | 96 | 98 | — |
| 17. | Basion-bregma height | 139 | 128 | 128 | — | 122 | — | 122 | — | — |
| 40. | Sup. facial length | 96 | 91 | — | 93 | 95 | — | 88 | — | — |
| 45. | Bizygomatic breadth | 121 | — | 121 | — | — | 116 | 123 | 132 | — |
| 47. | Total facial height | 105 | 94 | 108 | 100 | — | — | — | (113) | 75 |
| 48. | Upper facial height | 66 | 57 | 64 | 62 | 63 | 61 | 64 | (72) | 45 |
| 51. | Orbital breadth | 37 | 36 | — | 37 | 38 | 35 | 35 | (38) | 32 |
| 52. | Orbital height | 31 | 32 | 36 | 31 | 32 | 33 | 31 | (34) | (28) |
| 54. | Nasal breadth | 22 | 27 | 22 | 22 | 22 | 28 | 24 | — | 18 |
| 55. | Nasal height | 49 | 41 | 46 | 47 | 46 | 47 | 45 | — | 34 |
| 62. | Palatal length | 48 | — | — | 42 | — | — | — | — | — |
| 63. | Palatal breadth | 38 | — | — | — | — | — | — | — | — |
| 65. | Bicondylar-diameter | 110 | (103) | 114 | — | — | — | — | 106 | 87 |
| 66. | Bigonial-diameter | 85 | 83 | 93 | — | — | — | — | 95 | — |
| 69. | Mental height | 30 | 26 | 30 | 27 | — | — | — | 33 | 20 |
| 70. | Ramus height | 53 | 37 | 58 | 52 | — | — | — | 61 | 40 |
| 71. | Ramus breadth | 33 | 37 | 28 | 33 | — | — | — | 30 | 21 |
| 8:1 | Cranial index | 77,9 | — | 79,3 | 77,7 | — | — | 75,1 | — | 92,5 |
| 17:1 | Length-height index | 80,8 | 76,7 | 71,5 | — | — | — | 68,9 | — | — |
| 17:8 | Breadth-height index | 103,7 | — | 90,1 | — | 89,7 | — | 91,7 | — | — |
| 9:8 | Transvers. frontopar. index | 67,2 | — | 65,5 | 72,1 | 69,1 | 68,4 | 72,2 | 67,1 | 64,7 |
| 47:45 | Facial index | 86,8 | — | 89,3 | — | — | — | — | 85,6 | — |
| 48:45 | Upper facial index | 54,6 | — | 52,9 | — | — | 52,6 | 52,0 | 54,6 | — |
| 52:51 | Orbital index | 83,8 | 88,9 | — | 83,8 | 84,2 | 94,3 | 88,6 | 89,5 | 87,5 |
| 54:55 | Nasal index | 44,9 | 65,9 | 47,8 | 46,8 | 47,8 | 59,6 | 53,3 | — | 52,9 |
| 63:62 | Palatal index | 79,2 | — | — | — | — | — | — | — | — |

*Table 7.* Szekszárd—Palánk, avar period: Subadults and infants (2)

| No. of measurements (MARTIN) | 164. 10404 Juv. | 182. 10420 Inf. I. | 186. 10423 Inf. II. | 203. 10432 Inf. II. | — 10412 Inf. II. | — 10413 Juv. |
|---|---|---|---|---|---|---|
| 1. | 177 | 161 | — | 156 | 168 | 184 |
| 5. | — | — | 86 | 84 | 88 | — |
| 8. | 143 | 135 | 141 | 132 | 145 | 136 |
| 9. | 101 | 95 | 92 | 92 | 95 | 92 |
| 17. | — | — | 118 | 125 | 115 | — |
| 40. | — | — | 85 | 82 | 83 | — |
| 45. | 126 | — | 113 | 106 | 121 | 114 |
| 47. | 114 | — | 89 | 85 | — | — |
| 48. | 66 | — | 54 | 49 | 58 | 62 |
| 51. | 38 | — | 34 | 36 | 38 | 38 |
| 52. | 32 | — | 31 | 30 | 30 | 32 |
| 54. | 25 | — | — | 24 | 25 | 21 |
| 55. | 47 | — | 40 | 35 | 42 | 43 |
| 62. | 47 | — | — | — | — | 41 |
| 63. | 40 | — | — | — | — | 36 |
| 65. | 122 | 89 | 105 | — | — | — |
| 66. | 103 | 76 | — | — | — | — |
| 69. | 30 | 24 | 22 | 24 | — | — |
| 70. | 67 | 38 | — | 50 | — | — |
| 71. | 33 | — | 27 | 25 | — | — |
| 8:1 | 80,8 | 83,9 | — | 84,6 | 86,3 | 73,9 |
| 17:1 | — | — | — | 80,1 | 68,5 | — |
| 17:8 | — | — | 83,7 | 94,7 | 79,4 | — |
| 9:8 | 70,6 | 70,4 | 65,3 | 69,7 | 65,5 | 67,7 |
| 47:45 | 90,5 | — | 78,8 | 80,2 | — | — |
| 48:45 | 52,4 | — | 47,8 | 46,2 | 47,9 | 54,4 |
| 52:51 | 84,2 | — | 91,2 | 83,3 | 78,9 | 84,2 |
| 54:55 | 53,2 | — | — | 68,6 | 59,5 | 48,8 |
| 63:62 | 85,1 | — | — | — | — | 87,8 |

*Table 8.* Szekszárd—Palánk, avar period: Mesurements of long bones. Males

| Grave N° | Inventory N° | Femur | | | | Tibia | | Humerus | | Radius | | Ulna | | Calculated stature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | greatest length | | length in natural position | | | | | | | | | | |
| | | right | left | right | left | right | left | right | left | right | left | right | left | |
| (11.) | 10 216 | — | — | — | — | 361 | 367 | 323 | 321 | — | — | — | — | 165 |
| 29. | 10 225 | 510 | — | 506 | — | 434 | — | 373 | — | — | — | — | — | — |
| 38. | 10 232 | — | 474 | — | 469 | 381 | 384 | — | — | — | — | — | — | 170 |
| 53. | 10 343 | 457 | — | 455 | — | 387 | — | 323 | — | — | — | — | — | 168 |
| 59. | 10 346 | 477 | 477 | 472 | 474 | 385 | 386 | — | — | — | — | — | — | 171 |
| 70. | 10 354 | 466 | 464 | 464 | — | — | — | — | — | — | — | — | 275 | 169 |
| 77. | 10 357 | — | — | — | — | — | 362 | — | — | — | — | — | — | 165 |
| 78. | 10 358 | 455 | 451 | (455) | 448 | 358 | — | — | — | — | — | — | — | 164 |
| 93. | 10 365 | 440 | 439 | 438 | 434 | 360 | 361 | (319) | — | 248 | — | — | — | 164 |
| 99. | 10 369 | — | 473 | — | 469 | 368 | 368 | — | — | — | — | — | — | 166 |
| 104. | 10 372 | 432 | 436 | 427 | 431 | — | 362 | — | — | — | — | — | — | 163 |
| 106. | 10 373 | 410 | 408 | 407 | 414 | 326 | 334 | 298 | 301 | — | — | 279 | — | 160 |
| 110. | 10 375 | — | — | — | — | 372 | 381 | — | — | — | — | — | — | 169 |
| 112. | 10 377 | — | 460 | — | 457 | 382 | 380 | — | 335 | — | (255) | — | — | 170 |
| 122. | 10 378 | 458 | 466 | 455 | 461 | — | — | — | — | — | — | — | — | 168 |
| 155. | 10 399 | 450 | 447 | 444 | 441 | 360 | — | — | — | — | — | — | — | 166 |
| 168. | 10 407 | 481 | 484 | 476 | 478 | (382) | — | — | — | — | — | — | — | 172 |
| 181. | 10 419 | 420 | — | 419 | — | 339 | — | — | — | — | — | — | — | 160 |
| 195. | 10 429 | (464) | — | (462) | — | 402 | — | — | — | — | — | — | — | 173 |
| 201. | 10 442 | 466 | 473 | 466 | 472 | 379 | 374 | 336 | 332 | 254 | 254 | — | — | 169 |
| 204. | 10 433 | 420 | 425 | 415 | 419 | 347 | 346 | — | — | — | — | — | — | 161 |
| 209. | 11 642 | — | — | — | — | — | 352 | — | — | 228 | 232 | — | — | 162 |
| 211. | 11 644 | — | (451) | — | (451) | 393 | 391 | 334 | 328 | — | (244) | — | — | 176 |
| 213. | 11 645 | — | 481 | — | 480 | 408 | 411 | 362 | — | 273 | — | 293 | 266 | 169 |
| 218. | 11 649 | — | 446 | — | 443 | 362 | (363) | — | (314) | — | — | — | — | 165 |
| 222. | 11 652 | 449 | 452 | 449 | 451 | 393 | 395 | 325 | 324 | 252 | — | 270 | — | 168 |
| 225. | 11 653 | 460 | 467 | 457 | 463 | 381 | 383 | — | — | 257 | — | 273 | — | 170 |

*Table 9.* Szekszárd—Palánk, avar period: Measurements of long bones. Females

| Grave N° | Inventory N° | Femur | | | | Tibia | | Humerus | | Radius | | Ulna | | Calculated stature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | greatest length | | length in natural position | | | | | | | | | | |
| | | right | left | right | left | right | left | right | left | right | left | right | left | |
| 2. | 10 213 | — | — | — | — | — | — | 331 | 325 | — | — | — | — | 165 |
| 30. | 10 226 | 412 | 408 | 409 | (403) | 336 | 336 | 285 | 285 | 218 | 216 | — | 234 | 153 |
| 32. | 10 228 | 421 | 425 | 416 | 418 | — | 339 | — | — | — | — | — | — | 155 |
| 33. | 10 229 | 451 | 451 | 445 | — | 375 | — | 311 | — | — | — | — | — | 161 |
| 37. | 10 231 | 420 | — | — | — | — | — | — | — | — | — | — | — | 155 |
| 44. | 10 235 | 401 | 401 | 399 | (394) | — | — | — | — | — | — | — | — | 151 |
| 52. | 10 342 | 408 | — | 404 | — | 338 | — | — | — | — | — | — | — | 153 |
| 55. | 10 344 | — | 415 | — | 407 | — | 333 | — | — | — | — | — | — | 154 |
| 64. | 10 350 | 437 | 439 | 434 | 434 | — | 345 | (318) | 325 | 230 | 232 | 255 | 256 | 159 |
| 69. | 10 353 | 400 | 401 | 396 | 396 | — | — | — | — | — | — | — | — | 153 |
| 74. | 10 356 | 428 | 431 | 426 | 428 | — | 357 | — | 312 | — | 309 | — | 255 | 157 |
| 97. | 10 367 | 419 | — | 417 | — | 340 | 338 | — | — | — | 231 | — | — | 154 |
| 98. | 10 368 | 445 | 438 | (435) | 434 | 360 | 357 | — | — | — | — | — | — | 159 |
| 125. | 10 382 | — | 393 | — | 390 | — | — | — | — | — | — | — | — | 150 |
| 134. | 10 390 | 430 | 432 | 425 | 427 | 354 | 356 | — | 314 | — | 238 | — | — | 158 |
| 137. | 10 393 | 423 | 421 | 420 | 417 | — | 262 | 302 | 298 | 236 | — | 259 | 255 | 155 |
| 146. | 10 397 | — | — | — | — | — | — | 299 | — | — | — | — | — | 154 |
| 149. | 10 398 | 378 | — | 373 | — | 305 | — | 268 | 268 | — | — | — | — | 146 |
| 166. | 10 405 | 439 | 441 | 435 | 434 | — | 355 | — | — | — | — | — | — | 159 |
| 3. | 10 408 | — | — | — | — | 326 | — | — | — | — | — | — | — | 152 |
| 180. | 10 435 | 423 | 417 | 421 | 417 | — | — | 305 | 290 | 226 | 217 | — | — | 155 |
| 183. | 10 421 | 419 | 419 | 416 | 416 | — | 344 | — | 301 | 225 | 226 | — | — | 155 |
| 184. | 10 422 | 442 | 442 | (432) | 436 | — | 359 | (309) | — | 245 | — | — | — | 159 |
| 188/1. | 10 437 | 411 | — | 408 | — | 323 | 293 | — | — | — | — | — | — | 153 |
| 192. | 10 438 | 465 | 470 | 461 | 466 | — | — | 322 | 315 | — | 242 | — | 266 | 162 |
| 193. | 10 428 | 387 | 389 | 382 | 385 | — | — | 289 | — | — | — | — | — | 148 |
| 196. | 10 439 | 425 | — | 421 | — | 341 | — | — | — | — | — | 452 | — | 156 |
| 197. | 10 430 | — | — | — | — | 332 | — | — | — | — | — | — | — | 153 |
| 198. | 10 440 | — | 437 | — | 433 | — | 351 | — | — | — | (225) | — | — | 158 |
| 200. | 10 431 | 430 | 428 | 428 | 426 | 354 | 350 | 300 | 296 | — | (230) | — | — | 156 |
| 202. | 10 443 | 454 | 460 | 450 | 454 | 365 | 367 | — | 325 | 244 | 237 | 264 | — | 162 |
| 215/b. | 10 647 | 423 | 428 | 419 | 424 | 359 | 356 | 290 | 292 | — | — | — | — | 156 |
| 217. | 11 648 | 453 | 450 | 449 | 447 | — | 382 | — | (312) | — | — | — | — | 161 |
| 230. | 11 654 | 385 | 388 | 380 | 380 | — | 317 | 289 | 284 | — | 217 | — | 233 | 150 |

There is, consequently, also an anthropological difference between the first, as well as the second and third contracted groups of the archaeological investigation. A similar phenomenon can be observed in other cemeteries from the Avar period, as well.

## References

LIPTÁK, P. (1955): Recherches anthropologiques sur les ossementes avares des environs d'Üllő. — Acta Arch. Hung. *6*, 231—316.

LIPTÁK, P. (1957): Awaren und Magyaren im Donau—Theiss Zwischenstromgebiet. — Acta Arch. Hung. *8*, 199—268.

LIPTÁK, P. (1965): On the taxonomic method in paleoanthropology (historical anthropology). — Acta Biol. Szeged. *11*, 169—183.

SALAMON, A. (1968): Népvándorláskori temetők Szekszárd-Palánkon. (Völkerwanderungszeitliche Gräberfelder in Szekszárd-Palánk — Abstract in German.) — A szekszárdi Balogh Ádám Múzeum Füzetei *9*, 3—20.

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